

PTP IA-2 (AFT38): sc-135672

BACKGROUND

Protein tyrosine phosphatases, or PTPs, are type I transmembrane proteins, membrane-associated proteins or proteins localized in nuclei. Examples of transmembrane PTPs are LAR, PTP α , PTP β , PTP γ , PTP δ , PTP ϵ , PTP ζ , PTP κ and PTP μ . Transmembrane PTPs play diverse roles in a variety of cellular processes during development and in adult tissues. PTP IA-2 (PTP insulinoma-associated protein 2), also known as PTPRN, IA2, ICA512 (islet cell antigen 512) or RPTPN, is a receptor-type PTP-like protein containing a transmembrane region, an intracellular PTP-like domain and an extracellular N-terminus. Localizing to secretory granules, PTP IA-2 is exclusively expressed in neuroendocrine cells (including pancreatic islet cells) and is believed to participate in the regulation of secretory granule exocytosis. PTP IA-2 is an autoantigen and contributes to Insulin-dependent diabetes mellitus (IDDM). The detection of autoantibodies against PTP IA-2 is commonly used as a diabetes diagnosis marker.

REFERENCES

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3. Primo, M.E., et al. 2006. Expression and physicochemical characterization of an extracellular segment of the receptor protein tyrosine phosphatase IA-2. *Biochim. Biophys. Acta* 1764: 174-181.
4. Gupta, M., et al. 2006. MHC class I chain-related gene-A is associated with IA-2 and IAA but not GAD in Swedish type 1 diabetes mellitus. *Ann. N.Y. Acad. Sci.* 1079: 229-239.
5. Mziaut, H., et al. 2006. Synergy of glucose and growth hormone signalling in islet cells through ICA512 and Stat5. *Nat. Cell Biol.* 8: 435-445.
6. Forrest, A.R., et al. 2006. Genome-wide review of transcriptional complexity in mouse protein kinases and phosphatases. *Genome Biol.* 7: R5.
7. Blancou, P., et al. 2007. Immunization of HLA class I transgenic mice identifies autoantigenic epitopes eliciting dominant responses in type 1 diabetes patients. *J. Immunol.* 178: 7458-7466.
8. Mett, V., et al. 2007. Engineering and expression of the intracellular domain of insulinoma-associated tyrosine phosphatase (IA-2ic), a type 1 diabetes autoantigen, in plants. *Transgenic Res.* 16: 77-84.
9. Kim, S.J., et al. 2007. Crystal structure of the major diabetes autoantigen insulinoma-associated protein 2 reveals distinctive immune epitopes. *Diabetes* 56: 41-48.

CHROMOSOMAL LOCATION

Genetic locus: PTPRN (human) mapping to 2q35.

SOURCE

PTP IA-2 (AFT38) is a mouse monoclonal antibody raised against recombinant PTP IA-2 protein of human origin.

PRODUCT

Each vial contains IgG₁ in 100 μ l of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

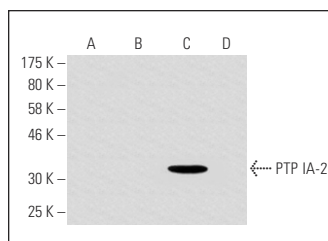
PTP IA-2 (AFT38) is recommended for detection of PTP IA-2 of human origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000), immunoprecipitation [1-2 μ l per 100-500 μ g of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

Suitable for use as control antibody for PTP IA-2 siRNA (h): sc-62902, PTP IA-2 shRNA Plasmid (h): sc-62902-SH and PTP IA-2 shRNA (h) Lentiviral Particles: sc-62902-V.

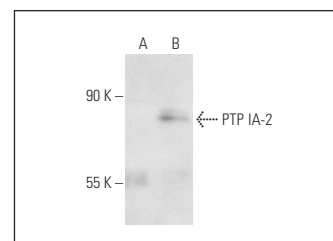
Molecular Weight of PTP IA-2 isoforms: 71/67/64/60/30 kDa.

Positive Controls: PTP IA-2 (h): 293T Lysate: sc-158898.

DATA



PTP IA-2 (AFT38): sc-135672. Western blot analysis of PTP IA-2 expression in non-transfected (A), Tau transfected (B), PTP IA-2 transfected (C) and GFP-Ub+1 transfected (D) Bosc23 whole cell lysates.



PTP IA-2 (AFT38): sc-135672. Western blot analysis of PTP IA-2 expression in non-transfected: sc-117752 (A) and human PTP IA-2 transfected: sc-158898 (B) 293T whole cell lysates.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.